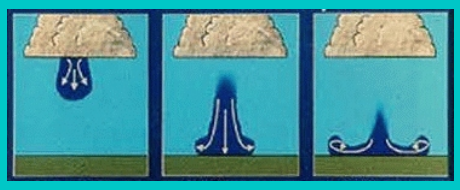
The Microburst



The Official Newsletter of the Tri-State SKYWARN Program

Published by the National Weather Service, Upton NY

Summer 2002 Edition

"Spring Training"

Spring 2002 has been busy for us, both in terms of weather, and in the Skywarn program in general. After a fairly inactive winter, we jumped right into an active weather pattern with a few severe weather events, including a couple of real"doozies" around the area. As usual, our spotters were on the top of their game, and we thank you for your timely reports.

The Skywarn Team has been busy canvassing the region, conducting spotter classes for over **500** spotters. This, by the way, is a new record for our office! Starting with a (much) larger than expected crowd in Goshen in Orange County NY, we've had an excellent response to our new Basic Class presentation.

As promised, we conducted our first Advanced Spotter Training Class. In just 2 classes (in Mahwah NJ and Southold NY), we trained nearly 70 Advanced Spotters. The response to this new Advanced Classes has been fantastic.

Thanks to all who have helped make this a great success already, in particular, our Bergen County Coordinator Team (Mike WA2MWT, Dave K2DBK, George KC2GLG) and Tony Mondaro from JCES. Their comments and suggestions were in tremendous help in preparing the course. Anyone who attended one of the courses this spring that have comments or suggestions from the courses, please mail or email them to Scott. They are most appreciated.

For those who would like to attend a Basic or Advanced Class, there will be some additional classes offered this fall. We'll be posting new dates and locations on our website and broadcast them over NOAA Weather Radio as well.

Groups that are interested in hosting a Basic (or Advanced) Class this fall or next spring, please call or e-mail Scott KC2JCB and we'll work on setting the class up. This is especially true for Amateur Radio Clubs in our County Warning Area (see the Editor's "Parting Shots" at the end of the newsletter for more). Phone numbers and email addresses are at the end of the newsletter.

From the Classroom Into the Field...

"Urgent – Immediate Broadcast Requested! Severe Thunderstorm Warning for Northern Bergen County and Northern Passaic County! Skywarn Activation Requested!"

Less than twenty four hours after several members of the 10-70 Repeater Association attended the Basic Skywarn Course at the Law and Public Safety Institute in Mahwah NJ, the National Weather Service in Upton was issuing warnings of "damaging winds in excess of 55 MPH, large damaging hail, deadly lightning and very heavy rain."

At 4:32 PM, the W2PQG Repeater of the 10-70 Repeater Association came on the air with a Skywarn Net, with Net Control Stations George Sabbi, KC2GLG, and David Kozinn, K2DBK (Bergen County Deputy Skywarn Coordinators). Bergen County Coordinator Mike Adams, WA2MWT, checked in on a two-meter HT from a Ramsey Ambulance Corps EMS Unit, as Doppler Radar indicated a severe thunderstorm near Ramsey.

Over the next two hours, 36 Amateur Radio Operators would check into the net, a few from base stations, but most from mobile rigs. Reports were received from 28 different municipalities, located in seven different northern New Jersey and Southern New York counties. Sixteen hams reporting in were first time Skywarn Net participants.

Net Control immediately communicated all severe weather and damage reports to the meteorologists working at the National Weather Service in Upton. They also served to assist the forecasters as they issued additional Severe Thunderstorm Warnings for Essex, Hudson, Union and Richmond Counties, as well as for the local coastal waters.

Many of the reports taken were included in Preliminary Local Storm Reports issued by NWS Upton. Most of this spotter- provided information was being sent over the NWS's EMWIN (Emergency Managers Weather Information Network) Data Stream, even as the event was unfolding.

Ham operators providing reports included: Nick, KC2FQI; John, KC2JEJ; Bob, N2MDA; Justin, KC2GIK; Steve, KC2GDQ; Dave, N2UTG; Pat, WA2PFS; Matty, N2UCA; Bill, KC2FYA; Lou, N2UCA; Missy, K2MIS; Bob, N2LYY; Bob, WB2AIU; Allan, KC2FZU; Herb, N2OPJ; Jon, KJ2N; and Efrem, W2CZ.

Hams checking into a Bergen County Skywarn Net for the first-time included: Howie, WB2AWQ; Herb, W2SMB; Joe, KC2DBJ; Bob, N2SU; Fred, N2FOZ; Marv, K2IPH; Jim, N2HMF; Americo, N2ZIL; Fausto, KC2FTO; Bob, KC2ILF; Harvey, K2BOG; Adam, KC2GLI; Chris, KC2FBK; Joe, WB4WZZ; Lorenz, KA2NRW; and Gerald, KC2GCG.

Submitted by Mike Adams, WA2MWT,
Bergen County SKYWARN Coordinator

...Editor's Extra...

This is just one example of the excellent teamwork between the National Weather Service meteorologists and our volunteer spotters. We thank all of the "hams" who checked in with reports on that busy severe weather day, and we also thanks all of the "non-hams" who e-mailed or phoned in reports to us. All of the timely reports likely saved many lives on that day. This is what the Skywarn program is all about. You ARE our eyes and ears out in the field! ***Thanks!***

NOAA Environmental Hero

Tony Mondaro wears numerous hats. Skywarn Spotter since 1982. NWS Cooperative Observer. Hudson County NJ OEM and the Jersey Coastal Emergency Services Weather Coordinator. EMS Chief for North Arlington Fire Department.

Well, now he has an award to add to his collection...**2002 NOAA Environmental Hero**. This award was bestowed upon Tony at a ceremony on June 27th.

The National Oceanic and Atmospheric Administration (NOAA, the parent agency of the National Weather Service) created this award in 1995 to commemorate the 25th anniversary of Earth Day, in order to honor NOAA volunteers for their "tireless efforts to preserve and protect our nation's environment."

Tony has certainly done that over the years, both as a cooperative observer and as a Skywarn Spotter. A Skywarn Spotter since 1982, Tony often initiates call to the Upton office at the first sign of severe weather. His efficient collection and communication of reports have led to more timely warnings and forecast updates.

Congratulations Tony!

Spotter Criteria Refresher...

We've included our usual reporting criteria reminder. The e-mail address to use is at the end of the newsletter. For those without e-mail capabilities, or for reports that are more urgent, please use the 800 number you received at your spotter training class. (If you need the number, email or call Scott and he'll send you a reminder.)

Skywarn will automatically be activated following a NOAA Weather Radio Tone Alert for any of the following...

- Flood Watch or Warning
- Severe Thunderstorm or Tornado Watch
- Severe Thunderstorm or Tornado Warning, if not already activated by a preceding Watch)
- Tropical Storm or Hurricane Warning

Here are the reporting criteria...

1. **HIGHEST PRIORITY...Please contact the NWS by phone or amateur radio (if the radio is being staffed)...**
   a. Any deaths or injuries associated with hazardous weather
   b. Any TORNADO or WATERSPOUT.

2. High Priority...Please report the following via phone, email, fax or amateur radio...
   a. Funnel or wall clouds.
   b. Clusters of "Virga" that expand as they descend beneath the cloud base. (Classic microburst signature!)
   c. Thunderstorm wind gusts of 58+ mph or wind gusts that cause structural damage to homes, power lines or trees.
   d. Hail of 3/4" in diameter or larger (about the size of a dime or larger).
   e. Flooding of rivers or streams into homes or industries. Also, any stream, river, or poor drainage urban flooding which make roadways totally impassable.
   f. Rainfall amounts:
      i. Following short, torrential downpours (usually 1 hour or less)
      ii. 2" in 3 hours.
      iii. 1" or more in an hour in urban areas.

3. Lower priority (but still important)... Please report the following via phone, email, fax or amateur radio...
   a. Thunderstorm wind gusts 40-57 mph.
   b. Hail of any size smaller than 3/4" in diameter.
   c. Event total rainfall.

4. ***During Tropical Storm or Hurricane Warnings...***
   a. Only report Priority 1 and 2 Conditions above.
   b. Any wind gust 58 mph or greater.
   c. Any KNOWN storm surge inundations of coastal areas. *(Never go to the shore to investigate it yourself, and EVACUATE immediately if told to do so by Emergency Management Personnel.)*
   d. Highest wind gust during the tropical storm/hurricane.
   e. The lowest barometric pressure and time it occurred.
   f. Event total rainfall.

As always, the National Weather Service thanks all of our spotters and other cooperating agencies for all of the assistance and reports during severe weather events.

Feature Section … Hurricanes and Tropical Storms

Introduction to Hurricane Season 2002

The Atlantic hurricane season officially began on June 1st, and the season is off to a fairly typical quiet start.

The latest hurricane season forecast from NOAA is for normal to slightly above normal tropical activity, meaning there may be 9 to 13 named tropical storms. 6 to 8 of those storms may reach hurricane strength, 2 or 3 of which may become major hurricanes. (A major hurricane is defined as Saffir-Simpson category 3 or higher).

For comparison, a "normal" season consists of 10 named tropical storms, 6 hurricanes and 2 major hurricanes. Dr. William Gray, a hurricane researcher at Colorado State University, and his team of forecasters are predicting 11 named storms, 6 hurricanes and 2 major hurricanes.

Please keep in mind that in the past 15 to 20 years, we have had very few "direct hits" by full-blown hurricanes in the Tri-State Region. In addition, only a few weak tropical storms have even brushed the area. Tropical Storm Floyd was certainly an exception to that in 1999 (more later).

In the sections below, we'll delve into some tropical terminology, climatology, and preparedness information. Thanks to NOAA's National Hurricane Center (NHC) for much of this information.

Terminology

Here are some of the terms you may hear regarding tropical weather.

Hurricane Season: The portion of the year having a relatively high incidence of hurricanes. The hurricane season in the Atlantic, Caribbean, and Gulf of Mexico runs from June 1 to November 30.

Tropical Cyclone: A warm-core non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters, with organized deep convection and a closed surface wind circulation about a well-defined center. Once formed, a tropical cyclone is maintained by the extraction of heat energy from the ocean at high temperature and heat export at the low temperatures of the upper troposphere.

Tropical Wave: A trough or cyclonic curvature maximum in the trade-wind easterlies. The wave may reach maximum amplitude in the lower middle troposphere.

Tropical Disturbance: A discrete tropical weather system of apparently organized convection, generally 100-300 miles in diameter, originating in the tropics or subtropics, having a nonfrontal migratory character, and maintaining its identity for 24 hours or more.

Tropical Depression: A tropical cyclone in which the maximum sustained surface wind speed is 33 kt (38 mph) or less.

Tropical Storm: A tropical cyclone in which the maximum sustained surface wind speed ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph).

Tropical Storm Watch: An announcement for specific coastal areas that tropical storm conditions are possible within 36 hours.

Tropical Storm Warning: A warning that sustained winds within the range of 34 to 63 kt (39 to 73 mph) associated with a tropical cyclone are expected in a specified coastal area within 24 hours or less.

Hurricane: A tropical cyclone in which the maximum sustained surface wind is 64 kt (74 mph) or more. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian.

Hurricane Watch: An announcement for specific coastal areas that hurricane conditions are possible within 36 hours.

Hurricane Warning: A warning that sustained winds 64 kt (74 mph) or higher associated with a hurricane are expected in a specified coastal area in 24 hours or less. A hurricane warning can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continue, even though winds may be less than hurricane force.

Extratropical: A term used in advisories and tropical summaries to indicate that a cyclone has lost its "tropical" characteristics. The term implies both poleward displacement of the cyclone and the conversion of the cyclone's primary energy source from the release of latent heat of condensation to baroclinic (the temperature contrast between warm and cold air masses) processes. It is important to note that cyclones can become extratropical and still retain winds of hurricane or tropical storm force.

Eye: The roughly circular area of comparatively light winds that encompasses the center of a severe tropical cyclone. The eye is either completely or partially surrounded by the eyewall cloud.

Eyewall: An organized band or ring of cumulonimbus clouds that surround the eye, or light-wind center of a tropical cyclone.

Inland High Wind Watch for Hurricane (Or Tropical Storm) Force Winds: Issued by your local NWS office, usually in conjunction with a Hurricane (Tropical Storm) Watch issued by the National Hurricane Center, when hurricane (tropical storm) force winds are possible for inland/non-coastal counties.

Inland High Wind Warning for Hurricane (Or Tropical Storm) Force Winds: Issued by your local NWS office, usually in conjunction with a Hurricane (Tropical Storm) Warning issued by the National Hurricane Center, when hurricane (tropical storm) force winds are expected for inland/non-coastal counties.

Hurricane Local Statement: A public release prepared by your local NWS office in or near a threatened area giving specific details for its county warning area on weather conditions, evacuation decisions made by local officials, and other precautions necessary to protect life and property.

For more terminology, go the NHC web site. The web address will be listed at the end of the newsletter.

Saffir-Simpson Scale

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf in the landfall region.

Category One Hurricane: Winds 74-95 mph (64-82 kt). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

Hurricanes Allison (1995) and Danny (1997) were Category 1 hurricanes at peak intensity.

Category Two Hurricane: Winds 96-110 mph (83-95 kt). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

In 1998, Hurricane Bonnie was a Category 2 hurricane when it hit the North Carolina coast. Hurricane Georges was a Category 2 Hurricane when it hit the Florida Keys and the Mississippi Gulf Coast.

Category Three Hurricane: Winds 111-130 mph (96-113 kt). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles or more. Evacuation of low-lying residences within several blocks of the shoreline may be required.

Hurricanes Roxanne (1995) and Fran (1996) were both Category 3 hurricanes at landfall on the Yucatan Peninsula and in North Carolina, respectively.

Category Four Hurricane: Winds 131-155 mph (114-135 kt). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles.

In 1995, Hurricane Luis was a Category 4 hurricane while moving over the Leeward Islands. Hurricanes Felix and Opal also reached Category 4 status at peak intensity.

Category Five Hurricane: Winds greater than 155 mph (135 kt). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline may be required.

Hurricane Mitch (1998) was a Category 5 hurricane at peak intensity over the western Caribbean. Hurricane Gilbert (1988) was a Category 5 hurricane at peak intensity and is the strongest Atlantic tropical cyclone of record.

Hurricane Threats

The threats from hurricanes aren't just from the wind. Storm surges, storm tides, heavy rains/flooding and tornadoes are additional hazards produced by hurricanes, all of which can be deadly. Flooding inland and away from the center of the storm can be just as devastating as direct hurricane effects near the coast. Again, refer to Tropical Storm Floyd in New Jersey and New York for proof of this.

Storm surge is a large dome of water often 50 to 100 miles wide that sweeps across the coastline near where a hurricane makes landfall. The surge of high water topped by waves is devastating. The stronger the hurricane and the shallower the offshore water, the higher the surge will be. Along the immediate coast, storm surge is the greatest threat to life and property.

Storm tide is the combination of the storm surge and the astronomical tide. If the storm surge arrives at high tide, the water height will be even greater. For example, as a hurricane moves ashore, a 15-foot surge added to the 2-foot high tide creates a storm tide of 17 feet. This mound of water, topped by battering waves, moves ashore along an area of the coastline as much as 100 miles wide. The combination of the storm surge, battering waves and high winds is deadly and can cause great property damage.

Hurricane-force winds can destroy buildings and mobile homes. Debris, such as signs, roofing material, siding, and small items left outside, become flying missiles in hurricanes. Winds can stay above hurricane strength well inland. Hurricane Hugo (1989) battered Charlotte, North Carolina, about 175 miles inland, with gusts to near 100 mph, downing trees and power lines.

Hurricanes and tropical storms also produce **tornadoes**. These tornadoes most often occur in thunderstorms embedded in rain bands well away from the center of the hurricane. However, they can also occur near the eyewall. Usually, tornadoes produced by tropical cyclones are relatively weak and short-lived, but still pose a threat.

Inland flooding: All tropical cyclones can produce widespread torrential rains often in excess of 6 inches. This rain can produce deadly and destructive floods. Heavy rain can trigger landslides and mud slides, especially in mountainous regions. Flooding is the major threat from tropical cyclones to people well inland.

Flash flooding, a rapid rise in water levels, can occur quickly due to intense rainfall. Longer

term flooding on rivers and streams can persist for several days after the storm. Intense rainfall is not directly related to the winds of tropical cyclones but rather to the speed of movement and geography of the area affected. Slower moving storms produce more rainfall. Mountainous terrain enhances rainfall from a tropical cyclone. Inland flooding can be a major threat to people hundreds of miles from the coast.

2002 Atlantic Hurricane Names

Arthur, Bertha, Cristobal, Dolly, Edouard, Fay, Gustav, Hanna, Isidore, Josephine, Kyle, Lili, Marco, Nana, Omar, Paloma, Rene, Sally, Teddy, Vicky, Wilfred.

Local Hurricane and Tropical Storm Climatology

The Tri-State Region has been spared from a lot of tropical cyclone activity during the past 15 years or so. There have been a number of close calls and near misses, but the only "direct hits" in recent memory have been Hurricane Gloria in September of 1985, and Hurricane Bob in August of 1991.

Hurricane Floyd (September 1999) began as a tropical wave that moved off Africa and made the trek across the Atlantic. After reaching hurricane strength and moving through the Bahamas, Floyd took aim at the Carolinas, making landfall near Cape Fear, NC, on September 16th. Floyd weakened to a tropical storm as it moved along the coast through New Jersey, across Long Island and into southern New England.

One of the things that made Floyd such a prolific rainmaker was an old, stalled frontal system, extending from northern New Jersey into northwestern Connecticut and central New England. If you remember from your Skywarn training, fronts are one of the possible lifting mechanisms for thunderstorm development. Well, the same holds true for heavy rainfall. Combine this lifting mechanism with an influx of deep tropical moisture, and you're setting the stage for excessive rainfall amounts and widespread flooding, which is exactly what happened.

A band of rainfall of 8 to 14 inches extended across much of northern New Jersey into the Lower Hudson Valley. So remember, just because you're not in the direct path of a hurricane, or the approaching storm is"only" a tropical storm, don't let your guard down. There are plenty of other hazards to be concerned with, and they all can be deadly!

Preparedness Information

Here are some things to keep in mind when a tropical storm or hurricane approaches.

Stay informed! NOAA Weather Radio (NWR) is the official voice of the National Weather Service. 24 hours a day, 7 days a week, NWR broadcasts the latest forecasts, watches and warnings.

Many weather radios are equipped with special alarm tones that sound an alert when the NWS issues certain watches or warnings. Routine programming is interrupted when severe weather is approaching or is imminent, including tropical cyclone threats.

Before the threat of a tropical cyclone even exists...

- Know the risks of your area. For example, do you live in a potential flood zone?
- Learn safe routes inland.
- Know where official shelters will be located.
- Develop a family hurricane plan.
- Make sure your emergency equipment is in working order (i.e. flashlights, battery-powered radios).
- Make sure you have enough non-perishable food and water supplies on hand.

Before the Storm...

- Frequently listen to radio, TV or NOAA Weather Radio for the latest information on the storm's progress.
- Fuel and service the family vehicles.
- Have extra cash on hand.
- Stock up on food and water supplies, first aid, supplies and medications, and check batteries.

- Move light weight objects such as garbage cans and toys inside.
- Plan to leave if you live in a mobile home, live on the coastline, offshore island, in a flood plain, or in a high-rise building.

During the Storm...

- Listen closely to radio, TV or NOAA Weather Radio for official bulletins.
- Complete all preparation activities as soon as possible.
- Leave immediately if local officials tell you to!
- If leaving, notify neighbors and family members outside of the warned area of your plans.
- Take pets with you.
- If in a flood prone area, move to a safe area before you are cut off by flood waters.
- If staying in a home, turn the refrigerator to its coldest setting and keep closed, and turn off utilities if told to do so by authorities. Turn off propane tanks, unplug small appliances. Fill bathtub and large containers with water for sanitary purposes.
- In strong winds...stay away from windows. Take refuge in a small interior room, closet or hallway, and on the first or second floor if in a multiple story building.

After the Storm...

- Listen closely to radio, TV or NOAA Weather Radio for official bulletins.
- Wait until an area is declared safe before entering.
- DO NOT ATTEMPT TO DRIVE THROUGH FLOWING WATER!
- Have professionals check gas, water and electrical lines and appliances for damage.
- Use a flashlight for emergency lighting. Never use candles or other open flames indoors.
- Use tap water for drinking and cooking ONLY when told by local officials it is safe to do so.
- Telephones...use for emergencies only.

For more information on hurricane preparedness, see the preparedness web sites listed at the end of the newsletter, including those from the National Hurricane Center and the Upton NY NWS Office.

MIC Musings

After "The Winter that Wasn't", Spring has certainly come back strong! Severe weather has kept all of us quite busy so far this season and I don't believe we are anywhere close to seeing this end yet. In just three days, April 19, May 31 and June 26, we totaled 53 severe weather events and warned for 46 of them. We couldn't have done this without you! Your dedication and enthusiasm are very much appreciated. Please know that your reports are a big part of our warning process and you directly help us save lives and property. Keep up the good work, we are counting on you!

Michael Wyllie, Meteorologist-in-Charge
NWS Upton NY

Parting Shots...

Let me apologize for the delay in getting a new newsletter out. It's been a busy spring and early summer around here, even if Mother Nature hasn't been completely out of control.

Attention all County Coordinators and Deputy Coordinators...

We are looking at having our annual Coordinators Meeting here at the office this fall. We are considering holding the meeting on the Saturday morning during the Skywarn Recognition Day Special Event, which will be held on December 7th. There will be plenty more to follow on both the Coordinators meeting and Skywarn Recognition Day. Stay tuned.

Craig and Donna Make Their Respective NOAA Weather Radio Debuts...

Yes, you read it correctly...the long-awaited and long advertised new voices for NWR have finally hit the airwaves in the Tri-State Region. Donna is currently being used for our Marine Forecasts and Tide Information, while Craig handles the Regional Weather Summary duties. Craig and Donna will be utilized for all products in the coming weeks and months (yes, "Sven" will be leaving us).

And, rumor has it that another new voice, "Tom," is being tested and will be available in the coming months.

Graphical forecasts are now available...

The NWS in Upton recently began posting graphical gridded forecasts to our webpage. These gridded forecasts are still in the experimental stages, and thus, will only be updated twice per day.

The available short range grids (out to approximately 60 hours) are as follows...

- High and Low Temperatures for each day
- Temperature/Wind Speed, every 6 hours
- Probability of Precipitation, every 12 hours
- Quantitative Precipitation Forecasts (amount), every 6 hours
- Forecast Weather, every 3 hours
- Dew Point Temperature, every 6 hours
- Sky Cover, every 6 hours

The available long range grids (days 3-7)...

- High and Low Temperatures for each day
- Probability of Precipitation, every 12 hours
- Forecast Weather for 2 pm each day

Check out the graphics, and send any comments to me (Scott).

We hope you enjoyed this rather long edition of *"The Microburst."* Be sure to check out the web links below and picture of the issue, once again from the photo archives of Glenford Pennington WX3TWC. Remember, submissions for the Microburst are welcomed by all (pictures also). Who knows, they might show up in a Skywarn class near you too!

73
Scott R. KC2JCB
NWS Upton NY

To Contact Us...

Via "Snail" Mail...

National Weather Service
Attn: SKYWARN
175 Brookhaven Avenue, Building NWS-1
Upton, NY 11973

Via Phone (non-spotter reports)...

(631) 924-0517

Via E-Mail...

All Spotter Information Updates
okx.skywarn@noaa.gov
Or "snail mail" to Scott at above address

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Submitting Spotter Reports...

Via E-Mail...okx.spotters@noaa.gov

Or, use the form on the Upton Web Page...
http://www.erh.noaa.gov/okx/report.html

Web Links...

NWS Upton NY
http://www.erh.noaa.gov/okx/

NWS Upton Hurricane Page
http://www.erh.noaa.gov/okx/hurricane.html

NWS Upton Skywarn Page
http://www.erh.noaa.gov/okx/skywarn.html

National Hurricane Center
http://www.nhc.noaa.gov

NWS HQ Hurricane Awareness Page
http://www.nws.noaa.gov/om/hurricane/index.shtml

Hurricane Brochure (in .pdf format)
http://www.nws.noaa.gov/om/brochures/hurr.pdf

NOAA Home Page
http://www.noaa.gov

"The Microburst" Picture of the Month...

(Courtesy Glenford Pennington, WX3TWC)

Wall Cloud in NYC!
(Looks like there's a Funnel Cloud too.)